

IN THE CLAIMS:

Please cancel Claim 14 without prejudice to or disclaimer of the subject matter recited therein, and amend Claims 4, 5, 7, 8, 12 and 13 to read as follows:

Claims 1 to 3 (Canceled).

4. (Currently Amended) A diffractive optical element according to Claim ~~13~~ 14, wherein the diffractive surface and the alignment mark are adapted to transmit light rays of the first and second wavelengths.

5. (Currently Amended) A diffractive optical element according to Claim ~~13~~ 14, wherein the diffractive surface and the alignment mark are adapted to reflect light rays of the first and second wavelengths.

6. (Previously Amended) A diffractive optical element according to Claim 13, wherein the diffractive surface comprises binary optics, and wherein the diffractive surface and the alignment mark are formed in accordance with a lithographic process.

7. (Currently Amended) A diffractive optical element according to Claim 13, further comprising a substrate on which the diffractive surface and the alignment mark are formed, and wherein said predetermined member is a metal ring for holding the substrate.

8. (Currently Amended) A diffractive optical element according to Claim 13, wherein said predetermined member is 14, further comprising a metal ring, wherein the alignment mark is placed at a center of the diffractive surface, and wherein the alignment mark is disposed at a central position of an outside circumference of the metal ring.

9. (Previously Amended) A diffractive optical element according to Claim 8, wherein the alignment mark and the central position of the metal ring are aligned with each other, on the basis of detection of the alignment mark by use of the light of the second wavelength.

10. (Previously Amended) A projection optical system including a diffractive optical element as recited in Claim 13.

11. (Original) A projection exposure apparatus for projecting a pattern onto a substrate by use of a projection optical system as recited in Claim 10.

12. (Currently Amended) A device manufacturing method, comprising the steps of:

exposing a substrate with a device pattern, projected from an exposure apparatus having a diffractive optical element having a design wavelength λ , the diffractive optical element including (i) a diffractive surface for diffracting predetermined light ~~of a predetermined first~~ corresponding to the design wavelength λ , and (ii) an alignment mark

having a shape such that, with regard to the predetermined light, a phase difference corresponding to a multiple, by an integer, of the design wavelength λ is produced between (i) a light ray, of the predetermined light, as transmitted through or reflected by the alignment mark and (ii) a light ray, of the predetermined light, as transmitted through or reflected by a portion adjacent to the alignment mark, and that, with regard to second light of a second wavelength λ' different from the design wavelength λ , no phase difference corresponding to a multiple, by an integer, of the second wavelength λ' is produced between (a) a light ray, of the second light, as transmitted through or reflected by the alignment mark and (b) a light ray, of the second light, as transmitted through or reflected by a portion adjacent to the alignment mark, whereby a position of the alignment mark is detected using the light of the second wavelength, and alignment of the diffractive surface with the substrate is performed on the basis of the detected position ~~positioned within the diffractive surface and being arranged to produce a phase difference corresponding to a multiple, by an integral number, of the wavelength of light transmitted or reflected by the alignment mark; and~~

developing the exposed substrate.

13. (Currently Amended) A diffractive optical element having a design wavelength λ , comprising:

a diffractive surface for diffracting predetermined light ~~of a predetermined first corresponding to the design~~ wavelength λ ; and

an alignment mark having a shape such that, with regard to the predetermined light, a phase difference corresponding to a multiple, by an integer, of the design wavelength λ is produced between (i) a light ray, of the predetermined light, as transmitted through or reflected by the alignment mark and (ii) a light ray, of the predetermined light, as transmitted through or reflected by a portion adjacent to the alignment mark, and that, with regard to second light of a second wavelength λ' different from the design wavelength λ , no phase difference corresponding to a multiple, by an integer, of the second wavelength λ' is produced between (a) a light ray, of the second light, as transmitted through or reflected by the alignment mark and (b) a light ray, of the second light, as transmitted through or reflected by a portion adjacent to the alignment mark, whereby a position of the alignment mark is detected using the light of the second wavelength, and alignment of the diffractive surface with a predetermined member is performed on the basis of the detected position positioned within the diffractive surface and being arranged to produce a phase difference corresponding to a multiple, by an integral number, of the wavelength of light transmitted or reflected by the alignment mark.

14. (Canceled)

15. (Previously Presented) A diffractive optical element according to Claim 13, wherein the alignment mark is disposed substantially at the center of the diffractive surface.

16. (Previously Presented) A diffractive optical element according to Claim 13, wherein the alignment mark is defined by a recess formed on the diffractive surface.

17. (Previously Presented) A diffractive optical element according to Claim 13, wherein the alignment mark is defined by a protrusion formed on the diffractive surface.